

Appl. No. 10/791,533  
Art Unit: 2854  
Response to Office Action  
Mailed October 15, 2005  
Attorney Docket No.: 26047

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

**1. to 6. (Canceled)**

- 1      7. (New)      A probe for detecting a short-circuit caused by an electrical short
- 2      between a first electrically conductive element located in a probed area and a
- 3      second electrically conductive element, said probe comprising:
  - 4          a probe body having a housing;
  - 5          an electrically conductive probe pin mounted within an internal cavity of
  - 6          the housing, said probe pin having a first end and a second end, said first end
  - 7          being adapted for coupling to a source of electrical voltage;
  - 8          a releasable clamp for clamping the second end of the probe pin to the
  - 9          probe area, while permitting the probe pin to effect electrical contact with the first
  - 10         electrically conductive element; and
  - 11         a spring activated mechanism operatively coupled to the probe pin, for
  - 12         biasing the releasable clamp toward the probe area to assist attachment when
  - 13         the probe is primed and being adapted to allow limited displacement of the body
  - 14         of the probe away from the probed area while maintaining clamping of the
  - 15         second end of the probe pin to the probe area so as to maintain the electrical
  - 16         contact between the second end of the probe pin and the first electrically
  - 17         conductive element for a short time period on disengagement of the probe.

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1   **8. (New)**    The probe according to claim 7, wherein the probe pin has a first  
2    section and a second section joined to the first section, such that opposing ends  
3    of the first section and the second section define the first end and the second  
4    end, respectively, of the probe pin, and the spring activated mechanism includes:  
5                a push spring wound around the first section of the probe pin, for biasing  
6                the releasable clamp toward the probe area to assist attachment when the probe  
7                is primed;  
8                a limiter device mounted in association with the probe pin and a stoppage  
9                step within the internal cavity of the body, said limiter device being adapted to  
10               move with the probe pin, the limiter device serving to allow limited displacement  
11               of the body of the probe away from the probed area while maintaining clamping  
12               of the second end of the probe pin to the probe area so as to maintain the  
13               electrical contact between the probe pin and the first electrically conductive  
14               element until the limiter device engages the stoppage step, whereupon further  
15               displacement of the body of the probe displaces the probe pin away from the  
16               probe area thereby disengaging the releasable clamp from the probe area and  
17               breaking electrical contact between the probe pin and the first electrically  
18               conductive element; and  
19               a return spring wound around the second section of the probe pin, said  
20               return spring being operable to retain said probe pin away from the probe area  
21               when the probe is inactive.

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1   **9. (New)**    The short-circuit detection probe of claim 8, wherein the releasable  
2    clamp includes a magnet adapted to magnetically engage the second end of the  
3    probe pin and being adapted to effect magnetic coupling to the probe area.

4

1   **10. (New)**    The short-circuit detection probe of claim 9, wherein said magnet  
2    is coupled to the second end of the probe pin.

3

1   **11. (New)**    The short-circuit detection probe of claim 8, wherein said limiter  
2    device comprises a washer.

3

1   **12. (New)**    An apparatus for monitoring continued registration of a sheet of  
2    material in a device for processing said sheet, the apparatus comprising:  
3                    registration means for registering said sheet in a required position;  
4                    a sensor adapted to cause a short circuit upon sensing a registration  
5    condition; and

6                    the probe of claim 7 coupled to the sensor for maintaining electrical  
7    continuity, thereby continuously monitoring said registration condition during a  
8    predefined sequence of operations.

9

1   **13. (New)**    The apparatus of claim 12, wherein said sensor comprises an  
2    electrical sensor.

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1   **14. (New)**    The apparatus of claim 13, wherein said sensor comprises an  
2    optical sensor.

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1   **15. (New)**   An apparatus for monitoring continued registration of a sheet of  
2   material in a device for processing said sheet, the apparatus comprising:  
3                    registration means for registering said sheet in a required position;  
4                    a sensor adapted to cause a short circuit upon sensing a registration  
5   condition; and  
6                    the probe of claim 9 magnetically connected to the sensor for maintaining  
7   electrical continuity, thereby continuously monitoring said registration condition  
8   during a predefined sequence of operations.

9

1   **16. (New)**   The apparatus of claim 15, wherein said sensor comprises an  
2   electrical sensor.

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1   **17. (New)**   The apparatus of claim 16, wherein said sensor comprises an  
2   optical sensor.

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1   **18. (New)**   A probe for detecting a short-circuit caused by an electrical short  
2   between a first electrically conductive element located in a probed area and a  
3   second electrically conductive element, said probe comprising:  
4                    a probe body having a housing;  
5                    a non-magnetic, electrically conductive probe pin mounted within an  
6   internal cavity of the housing, said probe pin having a first section and a second  
7   section joined to the first section, such that opposing ends of the first section and  
8   the second section define a first end and a second end, respectively, of the probe  
9   pin;

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10 a magnet adapted to magnetically engage the second end of the probe  
11 pin and being adapted to effect magnetic coupling to the probe area, while  
12 permitting the probe pin to effect electrical contact with the first electrically  
13 conductive element;  
14 a push spring wound around the first section of the probe pin, for biasing  
15 the magnet toward the probe area to assure attachment when the probe is  
16 primed;  
17 a limiter device mounted in association with the probe pin and a stoppage  
18 step within the internal cavity of the body, said limiter device being adapted to  
19 move with the probe pin, the limiter device serving to allow limited displacement  
20 of the body of the probe away from the probed area while maintaining magnetic  
21 coupling between the magnet and the probe area and maintaining the electrical  
22 contact between the probe pin and the first electrically conductive element until  
23 the limiter device engages the stoppage step, whereupon further displacement of  
24 the body of the probe displaces the probe pin away from the probe area thereby  
25 disengaging the magnet from the probe area and breaking electrical contact  
26 between the probe pin and the first electrically conductive element; and  
27 a return spring wound around the second section of the probe pin, said  
28 return spring being operable to retain said probe pin away from the probe area  
29 when the probe is inactive.

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1 19. (New) An apparatus for monitoring continued registration of a sheet of  
2 material in a device for processing said sheet, comprising:  
3 registration means for registering said sheet in a required position;

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4           a sensor adapted to cause a short circuit upon sensing a registration  
5    condition; and  
6           a probe magnetically connected to said sensor, for maintaining electric  
7    continuity, thereby continuously monitoring said registration condition during a  
8    predefined sequence of operations;  
9           wherein the probe comprises:  
10          a probe body having a housing and a cover, the housing defining an  
11    internal cavity having a profile;  
12          a probe pin comprising an upper part and a lower part, the probe pin  
13    mounted within said internal cavity and comprising electrical connectivity and  
14    said lower part comprising a lower end connected to a magnet;  
15          a push spring wound around the upper part of said probe pin, said push  
16    spring acting as a shock absorber when the magnet detaches from the probed  
17    area, said push spring alternatively pushing the magnet toward the probed area  
18    to assure attachment when the probe is active;  
19          stoppage means mounted at the bottom of said push spring; and  
20          a return spring wound around the lower part of said probe pin, said return  
21    spring being operable to retain said probe pin in an upper position when inactive;  
22          wherein the profile of said internal cavity comprises a stoppage step for  
23    accommodating said stoppage means at its lowermost position.  
24  
1    20. (New)   The apparatus of claim 19, wherein said sensor comprises an  
2    electrical sensor.  
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- 1    **21. (New)**    The apparatus of claim 19, wherein said sensor comprises an
- 2    optical sensor.